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PUBLICATIONS REVIEWED.

PACIFIC COAST AVIFAUNA | No. 3 | Check-list of California Birds | by | Joseph Grinnell | Santa Clara, California | published by the Cooper Ornithological Club, June 25, 1902; pp 1-92, 2 maps, royal 8 vo.

The long-expected State List has appeared in the form of a well compiled and useful check-list from the pen of Mr. Grinnell. The painstaking labor involved in digging out and verifying records and synonyms is not such as would appeal to most Californians, who, perhaps, are chronically eager for quick results. For this reason the finished Check-list will prove all the more acceptable to us, and Mr. Grinnell is to be congratulated on the successful completion of the largest and best prepared State List that has yet appeared. Not only is the Check-list full but it is likewise authoritative, and it is to be hoped that our club members will adopt this as a basis for future faunal lists.

The paper of ninety-two pages opens with a preface explaining the author's stand on questions of nomenclature, and his attitude in regard to the admission of doubtful records and species in poor standing. "In compiling the present list, the author has tried to be reasonably conservative as regards the admission of species in doubtful standing. In order to be worthy of a place on the State List an 'accidental' must have been as a rule secured and preserved so that it can be re-identified whenever desirable. The more unusual and unexpected the alleged occurrence of a species, the better the evidence must be of such occurrence before it can be accepted as authentic." For this reason the Hypothetical List is rather long. The sequence of the American Ornithologists' Union Check-list has been followed, but the nomenclature in many cases "has been remodeled according to the best of the author's own knowledge." The author has taken the commendable stand that "'A binomial is preferable to a trinomial when there is any good excuse for its adoption.'" (Ridgway)," and has consequently reduced to binomials a number of names which have usually been written as trinomials. Discarding the "slight degree of difference" heresy, and the criterion of intergradation thru individual variation as leading to endless confusion, the author has regarded as subspecies only such forms as have been found to intergrade over a continuous geographical area. Consequently all insular and geographically isolated forms are treated as distinct species. To the present reviewer this appears a most sensible course, a course not incompatible with logic and facts, and one which in the pages of the Check-list has proven thoroughly practicable. Such a stand may at first seem radical,

but in reality it is only in heed to the very sane warning uttered nearly twenty years ago by Dr. Stejneger. ¹

There has been a marked tendency to reduce binomials to trinomials in recent years, merely on supposition of intergradation, or from "slight degree of difference" qualifications. This, rather than the so-called hair-splitting, has been the chief injury to ornithology. For some time the insidious "degree of difference" criterion has held a pernicious place in the affections of some of our systematists, and has proved to be one of the most unscientific theories of the many which must be charged against ornithology. To assume that all species are separated by approximately the same amount of difference is palpably absurd for we know that while some perfectly good species can hardly be told from their nearest relatives, others are subgenerically separated from their closest congeners. Because one species can not readily be told from another does not necessarily militate against its validity as a full species. Nor, in the absence of any scientific evidence, does it make more excusable the use of a trinomial as an easy solution of the difficulty. Under this regime the particular mood of the describer and nothing else would determine whether a new species receive a binomial or a trinomial designation. One of the boasts of science has been the minimizing of the personal equation but here we have to do with little else. For the use of trinomials in insular forms, much can be said, and admittedly this is a problem hard to settle. But beyond an apparent advantage in showing relationship (a function which nomenclature can not hope to fulfil) the trinomial possesses no advantage over the binomial. We should not allow matters of personal convenience to obscure what seem to be the real facts. Surely the facts would warrant the binomial here, as in the case of the geographically isolated 'race.' In this case individual variation has been mistaken for geographical, or has been taken as sufficient evidence of subspecific rank. By adopting a simple rule as a guide the author of the present check-list has tried to root out as many of the spurious trinomials as facts would permit. A salutary course for the future would be the application of Dr. J. A. Allen's *golden rule* "the test of intergradation." Should any enthusiastic trinomialist wish to reduce binomials the burden of proof must rest with him.

Two colored maps of California, one illustrating the life zones and the other the faunal areas will be of great use in elucidating the distribution of species, especially for those who are not very familiar with the physiography and climate of this wonderfully diversified state. The life zones are those made familiar

¹ Proc. U. S. Nat. Mus. VII, 1884 p. 78.

by Dr. Merriam's various publications on the subject. The faunal areas comprise (1) the "Humid Coast Fauna," which is subdivided into a "Northern Humid Coast Belt" and a southern "Santa Cruz District;" (2) the "California Fauna" including the dry "San Joaquin-Sacramento Basin," "San Francisco Bay Region," "San Diegan District," and "Santa Barbara Islands"; (3) the Sierran Fauna," divided into two subfaunas, the "Sierra Nevada" and Southern Sierras;" (4) the "Arid Interior Fauna," including the "Great Basin" and "Colorado Desert" subfaunas.

The Check-list comprises pages 9 to 74, and the Hypothetical List 75 to 79. This is followed by a full index of names and synonyms. The list includes the scientific name of each species with the original authority and the authority for the combination. Each name is preceded by a running list number, and, in parenthesis, the A. O. U. Check-list number. Following the scientific name, on the line below, is the common or English name. Under each species is given a list of synonyms, that is "all the other names besides the accepted one by which each species has been known in California literature." Following this is the 'status' which "is intended to give in a condensed sentence the range, comparative abundance and season of occurrence of the species in question. The range is usually expressed by Zones and Faunal Areas which are outlined in the accompanying maps." The list comprises 491 species and subspecies which are distributed thru the orders as follows: Pygopodes, 17; Longipennes, 23; Tubinares, 17; Steganopodes, 6; Anseres, 42; Herodiones, 10; Paludicolæ, 8; Limicolæ, 37; Gallinæ, 9; Columbæ, 4; Raptores, 38; Coccyges, 3; Pici, 21; Macrochires, 17; Passeres, 239. The Hypothetical List includes 33 species.

The author's "conservatism" has led him to include all species as well as subspecies that in any way seem worthy of recognition, for, as he states, a subspecies is as important as a species (and, the reviewer would add, often much more important in bringing to light facts of distribution, migration routes, and the effect of environments). Despite the oft repeated 'regrets' of lay ornithologists, and the objections of those scientists whose knowledge comes by inspiration rather than from specimens, these finely split subspecies exist in nature and are the very factors which make the avifauna of California the most perplexing and likewise one of the most interesting in all of North America. We heartily agree with our foremost systematist, Mr. Ridgway, that the best interests of science are subserved by prosecuting the present methods of splitting to a logical conclusion.

Not a few of the forms accepted by Mr. Grinnell have been excluded from the A. O. U. Check-list, and likewise a few appearing in this standard work have been omitted from the California Check-list. Probably we have no reason to hope for nomenclatural stability until systematic ornithology has ceased to progress.

The present paper is the most important work on California ornithology that has appeared in recent years.—W. K. F.

OBERHOLSER'S REVIEW OF THE HORNED LARKS (*Proc. U. S. N. M. XXIV, June 1902, pp. 801-883, pl. XLIII-XLV, maps I-IV*)—This paper strikes us as a model of detailed systematic work. Points of nomenclature seem to be worked out beyond question, and the standard of nameable races appeals to us as quite conservative enough. For the present, at least, we ought to be justified in accepting Mr. Oberholser's conclusions as decisive.

As affecting California, several important changes are made. The subspecies we have been calling *chrysolæma* is renamed *actia*, the former name proving exclusively applicable to a distinct Mexican form. What we have known as *arenicola* from the southeastern deserts is separated from the more eastern forms as a new race, *ammophila*. A new race is also described from the vicinity of Yuma and is called *leucansiptila*. A Rocky Mountain form, *leucolæma*, is recorded from the east-central border of the State in winter. All the rest of the races are as given in our "Checklist of California Birds," making, all together, eight distinct horned larks occurring in California.

From a more general point of view Mr. Oberholser's paper is of decided interest. While Henshaw in 1884 recognized by name eight different horned larks from North America, and Dwight in 1890 distinguished eleven forms from the same region, Mr. Oberholser's studies lead him to recognize no less than twenty-one different forms, all of which he treats as subspecies of *Otocoris alpestris*. This growing number is partly accounted for by an increase of available material, and also is significant of the rapid development of our analytical faculties. We can but await the results of the next *Otocoris*-monographer's work with especial interest. As Mr. Oberholser states in the present paper, almost infinite division is possible, and he might have easily doubled the number of races admitted. What will be the degree of difference recognized twelve years hence?

There is one practice in this paper which seems to us open to question. To select a case for illustration, Mr. Oberholser gives Stockton as a station for *leucolæma* based on one (or more) winter specimens. Now may not this individual, showing an aggregate of characters nearest *leucolæma*, be not simply an individual extreme of, say, *merrilli*; which occurs in numbers in the same locality at the same season? The author plainly states that individual and "local" variation within the range of a well-defined race may produce extreme types more different from each other than the average of that race is from the average of another of an entirely separate range. Is there not danger of denoting such extreme individuals by the names of similarly looking subspecies when their real affinities are not with those races at all? It is very evident that mistakes of this kind would lead to wrong deductions in regard to migratory movements, and distribution in general, which is after all where the chief value of distinguishing geographical races comes in.—J. G.